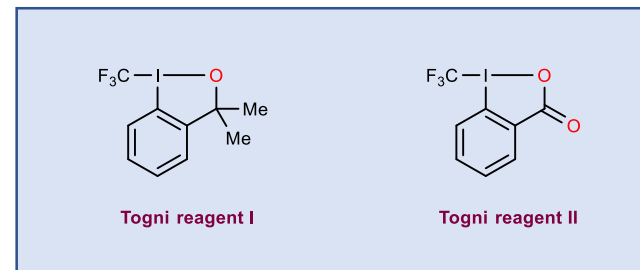


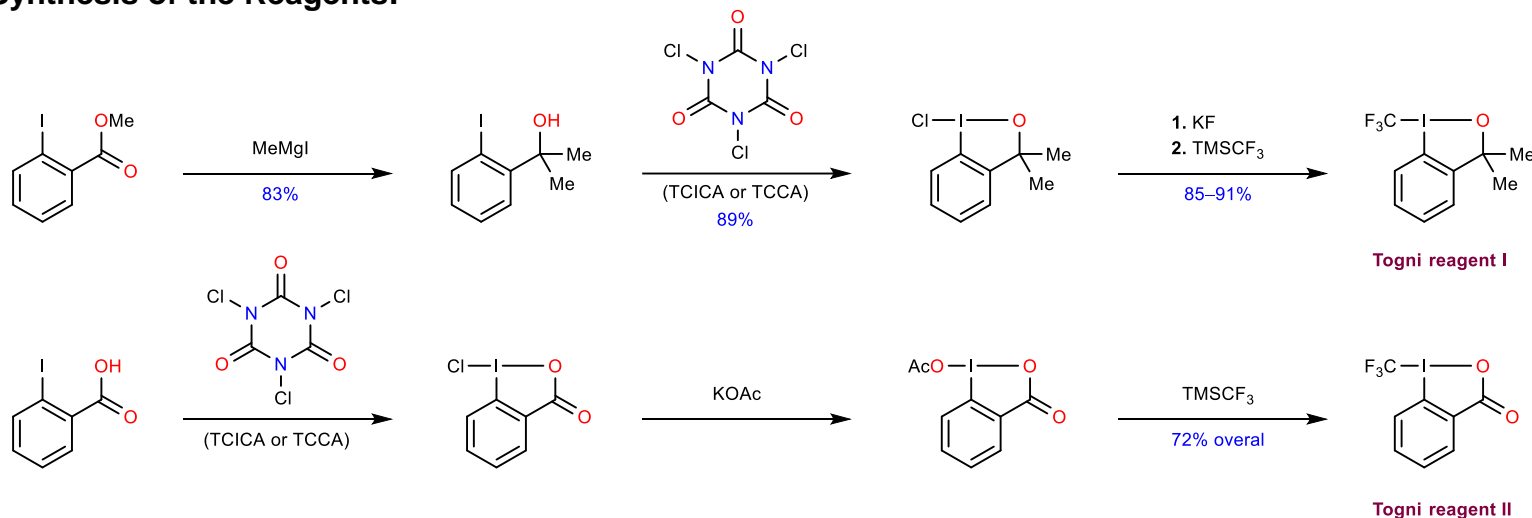
Development:

- Both reagents were first disclosed by Antonio Togni (ETH Zurich) in 2006.
- They are hypervalent iodine compounds that act as a source of electrophilic CF₃ group.
- The reagents are shelf-stable and nonexplosive unless heated neat as solids.
- TR-I is slightly less stable and should be stored at lower temperatures.

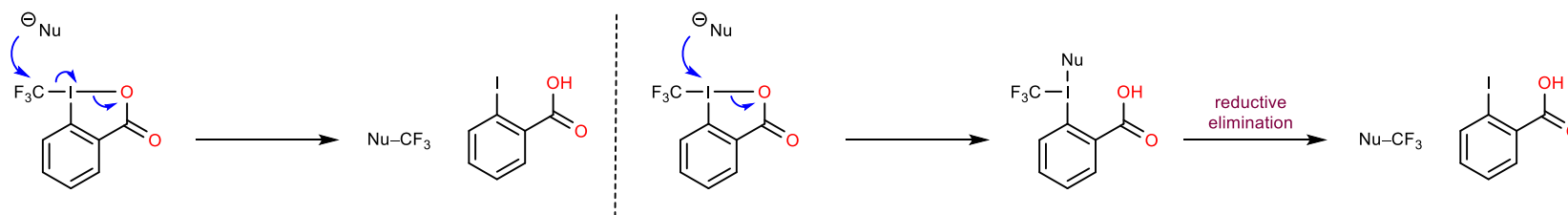
Togni, A. *Chem. Eur. J.* **2006**, *12*, 2579 <https://doi.org/10.1002/chem.200501052>
Review: Togni, A. *Chem. Rev.* **2015**, *115* 650 <https://doi.org/10.1021/cr500223h>



Synthesis of the Reagents:

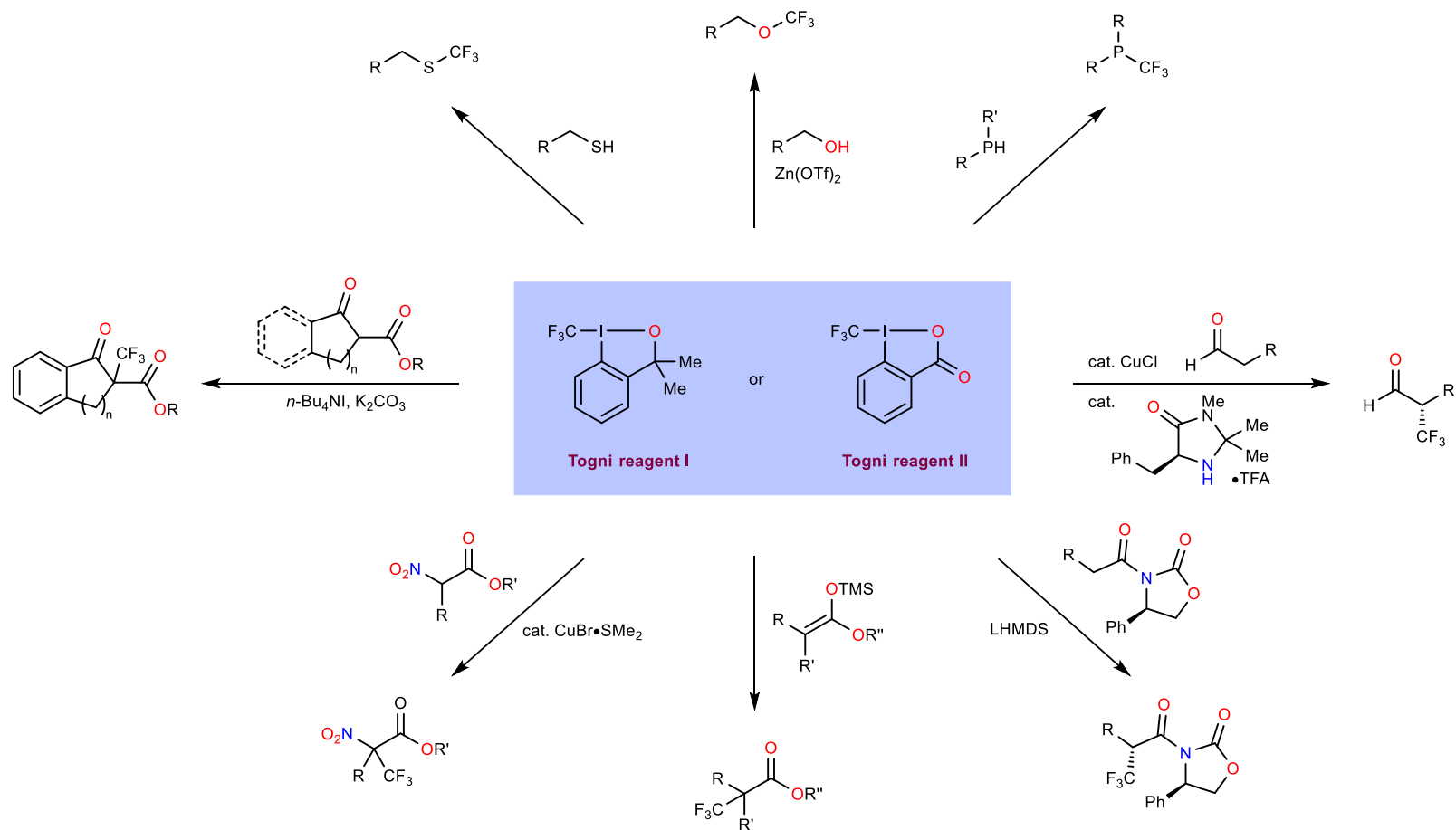


Mechanism of CF₃ Transfer:



Li, Y. *ACS Catal.* **2015**, *5*, 2458 <https://doi.org/10.1021/cs501892s>

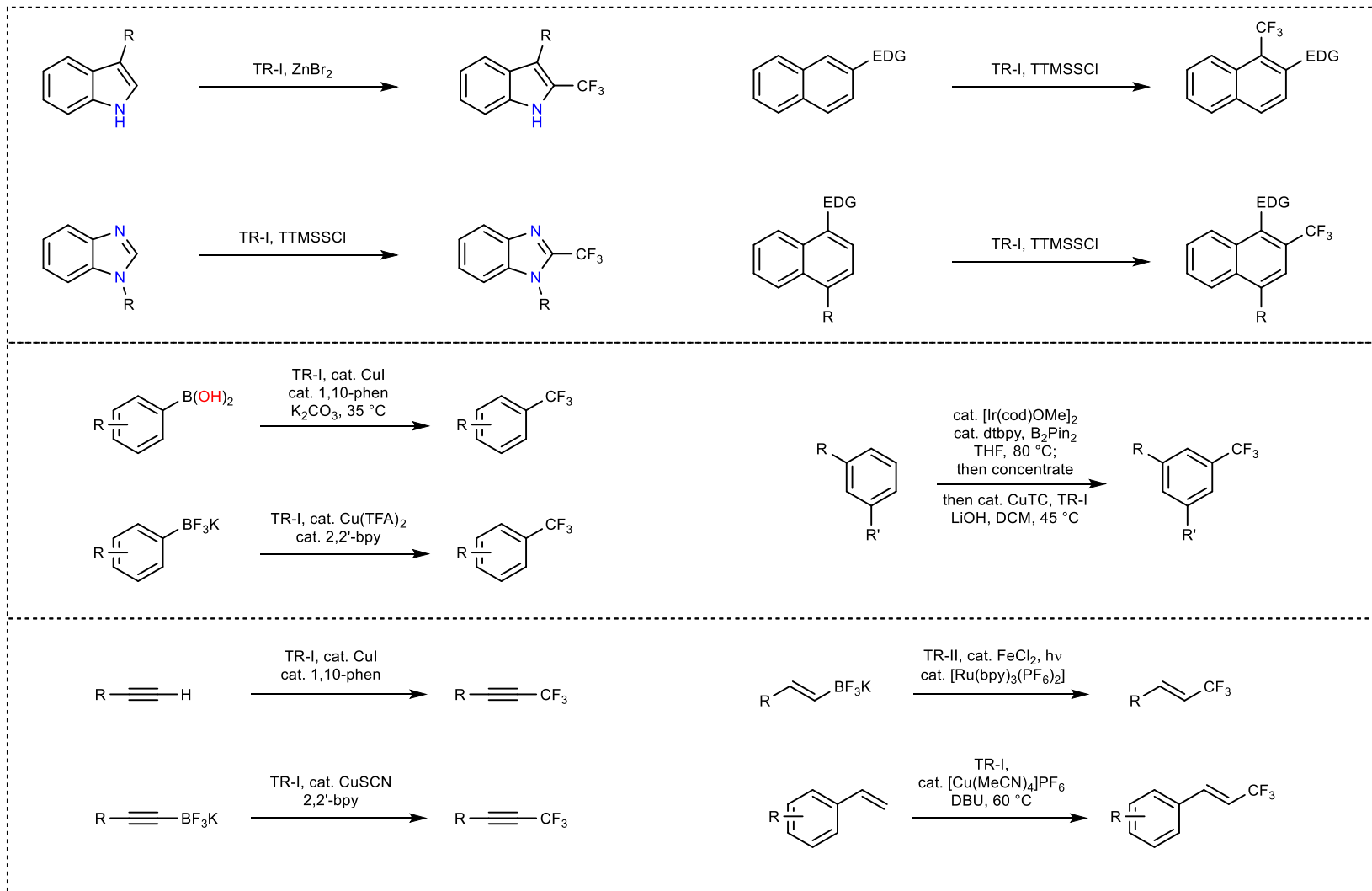
Trifluoromethylation of Heteronucleophiles and Enoles:



Togni, A. *Angew. Chem. Int. Ed.* **2007**, 119, 768 <https://doi.org/10.1002/anie.200900974>
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Togni, A. *Chimia*, **2008**, 62, 260 <https://doi.org/10.2533/chimia.2008.260>
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 MacMillan, D. W. C. *J. Am. Chem. Soc.* **2010**, 132, 4986 <https://doi.org/10.1021/ja106593m>

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Togni, A. *J. Fluorine Chem.* **2010**, 131, 951

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Shen, Q. *Angew. Chem. Int. Ed.* **2012**, 51, 540 <https://doi.org/10.1002/anie.201106673>

Weng, Z. *Tetrahedron*, **2012**, 68, 9949 <https://doi.org/10.1016/j.tet.2012.09.083>

Huang, K.-W. *Tetrahedron*, **2012**, 68, 2527 <https://doi.org/10.1016/j.tet.2011.12.005>

Shen, Q. *Angew. Chem. Int. Ed.* **2012**, 51, 540 <https://doi.org/10.1002/anie.201106673>

Buchwald, S. L. *Angew. Chem. Int. Ed.* **2012**, 51, 2947 <https://doi.org/10.1002/anie.201108267>

Zheng, X. *Beilstein, J. Org. Chem.* **2013**, 9, 2635 <https://doi.org/10.3762/bjoc.9.299>